DOCUMENT RESUME

ED 310 390 CS 212 015

AUTHOR Levinson, Judith L.; Lalor, Ida
TITLE Computer-Assisted Writing/Reading Instruction of Young Children: A 2-Year Evaluation of "Writing to Read."
PUB DATE Mar 89
NOTE 22p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, March 27-31, 1989).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; Grade 1; Grade 2; Kindergarten; Primary Education; Reading Improvement; *Reading Instruction; Reading Research; *Reading Writing Relationship; Spelling; Writing Evaluation; *Writing Instruction; Writing Research
IDENTIFIERS *Writing to Read Program

ABSTRACT

A study focused on the effects of the Writing to Read program piloted at kindergarten and first grade levels in Community Consolidated School District 65. The report included measures of students' writing, performance on district-made and standardized reading tests, and a follow-up on second graders. Statistical techniques of group comparison and pre-/post-testing were used to determine the effects of the program. One school site was chosen as the experimental group, and two school sites with comparable demographic characteristics were chosen as the control groups. Results indicated that writing scores of kindergarten and first grade children in the program were better than those of children in the comparison group. Reading vocabulary and comprehension scores of Writing to Read kindergartners were significantly higher than those of the comparison group. First graders in the program received higher scores in reading and spelling. Parents and teachers responded positively to the Writing to Read program. The follow-up testing of second graders showed no significant difference in the average reading scores of the experimental and control group students. There was no statistically significant difference in the distribution of writing scores between the follow-up experimental and the control group; however, when average writing scores were obtained, there was a significant difference favoring the experimental group. The Writing to Read system appears to be an effective intervention for developing writing and reading skills in kindergarten and writing skills in first grade. (Fifteen tables of data are included, and two appendixes containing a teacher questionnaire and parent survey responses are attached.) (MG)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Judith L. Levinson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED310390

COMPUTER-ASSISTED WRITING/READING INSTRUCTION OF YOUNG CHILDREN: A 2-YEAR EVALUATION OF "WRITING TO READ"

Judith L. Levinson

and

Ida Lalor
Community Consolidated School District 65

March, 1989

CS212015

Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

BEST COPY AVAILABLE

COMPUTER-ASSISTED WRITING/READING INSTRUCTION OF YOUNG CHILDREN:
A 2-YEAR EVALUATION OF "WRITING TO READ"

In recent years, much interest has been generated regarding the development of writing and reading skills in young children. This emphasis is, in part, due to the nation's focus on early intervention and academic skill development in response to issues raised in A Nation at Risk and the ensuing educational reform movement. Many school districts have responded to this focus on early academic skill development by implementing full-day kindergarten options and/or special instructional programs in reading and writing at early grade levels. One such program is "Writing to Read," developed by Dr. John Henry Martin, and published by IBM Corporation.

This study summarizes the outcomes of a two-year investigation (1986-1988) of the Writing to Read Program. The study design was, in part, a replication of a study conducted by Educational Testing Service (Murphy & Appel, 1984). The Writing to Read Program is a computer-based instructional system designed to develop the writing and reading skills of kindergarten and first grade students. The goals of the Writing to Read Program are for students to:

- learn the alphabetic principle which lets them write anything they can say,
- use a consistent phonemic spelling system,
- learn how to use the computer which acts as a guide or tutor,
- discover the joy of language,
- develop their ability to express their ideas and to manipulate the English language.

OBJECTIVES

In September 1986, the Writing to Read Program was implemented at one school site (experimental school) as a pilot program in Community Consolidated School District 65. The purpose of the pilot was to investigate the effects of this program on kindergarten and first grade students. Two other school sites were selected as control schools since they had comparable demographic characteristics (% low-income, ethnic groups, test scores) to the experimental school population.

METHOD

A pretest/posttest experimental control school design was used to investigate program effectiveness; assessment focused on writing, reading and spelling skills. Writing skills were measured using writing samples. Reading skills were measured using the California Achievement Test. Parent and teacher opinions of the program were collected at the end of the school year. This design replicated the Educational Testing Service study; however, the design was expanded to include a follow-up study of second graders and a special assessment of kindergartners' reading skills. Rather than assessing prereadiness skills using a standardized achievement test for kindergartners, specialized test items allowed for the assessment of children's actual reading vocabulary and comprehension. In the Educational Testing Service study, a variety of standardized achievement test measures were used; however, prereadiness measures were not separately reported from reading measures.

ASSESSMENT OF WRITING SAMPLES: K, 1

Kindergarten and Grade 1 Assessment: Year 1

During the first year of the pilot, a preliminary study of writing skills was carried out. Both kindergartner and first grade writing samples from experimental students were compared to samples of control students in these same grades. Writing samples were evaluated using district criteria based on a four-point scale: 4 - inadequate; 3 - basic; 2 - good; 1 - excellent. Writing to read children performed significantly better (see Table 1) than their comparison peers in kindergarten (X^2=24.66, df=3, $p < .001$) and first grade (X^2=8.50, df=3, $p<.05$).

Table 1 Percent of Students Obtaining Scores of 1, 2, 3, 4 on Writing Samples: Year 1, Kindergarten and First Grade

	Grade K					Grade 1				
		Writing Score					Writing Score			
	N	1	2	3	4	N	1	2	3	4
Experimental	76	21	24	22	33	56	52	20	25	3
Control	66	2	9	21	68	74	28	23	38	11

These data suggest that Writing to Read had a strong impact on the writing abilities of children in kindergarten and first grade even after approximately 14 weeks in the program. Since pretest differences were not accounted for in this first year analysis, a more rigorous analysis was undertaken in the second year of implementation.

Kindergarten Writing Assessment: Year 2

Kindergarten teachers administered the "Draw A Person"[1] test to district children in the fall of the second year. In order to determine if this second cohort of kindergarten children in the experimental and control groups was comparable, at *t* test was applied to the average scores obtained by each group on the "Draw a Person" test. The average score for the experimental group was 5.12. The control group's average score was 4.77. These differences were not statistically significant. It was then possible to proceed with comparisons of kindergarten writing scores.

Table 2 shows the distribution of scores of kindergarten students at experimental and control schools.

---

[1]Draw a Person is a norm-referenced, nonverbal measure of intellectual ability based on human figure drawings done by children and adolescents.

Table 2 Percent of Students Obtaining Scores of 1, 2, 3, 4 on Writing Samples: Year 2, Kindergarten

		Writing Score			
		Excellent	Good	Basic	Inadequate
	N	1	2	3	4
Experimental	47	34	19	21	26
Control	65	1	11	11	77

Fifty-three percent of the children in the Writing to Read Program obtained scores of excellent or good while 12% of the children in control schools obtained similar scores. These differences were statistically significant (X^2=35.3, df=3, p= .00) and indicate that kindergarten children in the Writing to Read Program write better than children in the comparison group.

Grade 1 Writing Assessment: Year 2

The second cohort of first graders not only received Writing to Read instruction at first grade but had received this training in kindergarten as well. Before assessing the writing samples of these first graders, a comparability study was undertaken. The prereading average scores (C.A.T., Level 10, 1987 spring) for experimental and control group students for whom a writing score was obtained at the end of first grade are shown in Table 3.

Table 3 Average Pretest Differences: Year 2, First Grade

		Pretest				
	N	Visual	Sound	Voc.	Comp.	Total Reading
Experimental	43	523	522	504	475	490
		n.s.	n.s.	p=.001	p= .007	p=.001
Control	41	506	508	562	521	540

There were no statistically significant differences in Visual and Sound Recognition scores but average scores in Vocabulary ($t=3.55$, $df=82$, $p=.001$), Comprehension ($t=2.79$, $df=82$, $p=.007$) and Total Prereading ($t=3.33$, $df=82$, $p=.001$) were significantly different favoring the control group. It was not possible to adjust for these differences in analyzing the distribution of writing sample scores and, therefore, this non-comparability in the experimental and control groups in total prereading should be kept in mind when interpreting writing sample outcomes.

Table 4 shows the distribution of writing scores of first grade students at experimental and control schools.

Table 4 Percent of Students Obtaining Scores of 1, 2, 3, 4 on Writing Samples: Year 2, First Grade

	N	Excellent 1	Good 2	Basic 3	Inadequate 4
Experimental	42	26	45	26	2
Control	40	22	32	25	20

Seventy-one percent of the children in the Writing to Read Program obtained scores of excellent or good while 54% of the children in control schools obtained similar scores. There appeared to be a significant difference in the number of papers which fell into the "inadequate" category (4): two percent of the experimental group, twenty percent of the control group. These differences in the distribution, however, were not statistically significant at the .05 level. If the groups had been shown to be comparable on the reading pretest, one could more readily suggest that the strong difference observed in the writing samples of kindergarten children in the Writing to Read Program seems not to be present in the first grade samples. However, given the higher pretest scores of the control group, one can speculate that the trend toward better papers in the experimental group may be more than a trend, rather a difference.

ASSESSMENT OF STUDENT READING: K,1

Kindergarten and Grade 1 Reading Assessment: Year 1

In the first year, an analysis of reading skills was undertaken for kindergarten and first grade students. The readiness level (designed for kindergartners) of the California Achievement Test (C.A.T.) was administered to kindergartners as a pre- and post-test. First graders were administered the first grade level of the C.A.T. test at the end of their first grade year. Spring test scores from their kindergarten year were used as pretest data. A t test was used to assess group differences.

Tables 5 and 6 show results of this first year assessment.

Table 5 Average Pre/Post Scale Scores for Reading: Year 1
Kindergarten

	N	Pretest		Posttest				Total
		Visual	Sound	Visual	Sound	Voc.	Comp.	Preread.
Experimental	64	451	442	526	524	514	489	501
		p=.02	n.s.	p=.01	n.s.	p=.002	n.s.	p=.01
Control	63	423	456	506	506	556	513	533

Table 6 Average Pre/Post Scale Scores for Reading: Year 1
First Grade

	N	Pretest	Posttest		
		Prereading	Vocab.	Comp.	Total Reading
Experimental	60	266	540	558	549
		n.s.	n.s.	n.s.	n.s.
Control	77	258	542	558	550

Kindergarten Writing to Read children had a higher Visual Recognition prescore which they maintained on the posttest. Control groups had a higher score on the vocabulary posttest. There were no statistically significant differences on pre- or post-test reading scores for Writing to Read and control groups in first grade.

Kindergarten Reading Assessment: Year 2

The kindergarten results of this first-year study raised questions about the appropriateness of the C.A.T. prereading test as the measure of program outcomes for kindergartners. The choice of instrument was questioned for two reasons: 1) the Writing to Read children were writing stories using elaborate and advanced vocabulary which they could read--yet this strength was not evident in prereading vocabulary scores on the C.A.T.; 2) the vocabulary measured in standardized tests is derived in large part from basal reading series. Writing to Read children spend one-third of their reading instruction time using basal reading materials and two-thirds in the Writing to Read Center.

The specific question raised in response to the first observation was, what would be the effects of measuring kindergarten reading ability by means of a sample of reading items adapted from a standardized achievement test rather than "prereading" items? The question in response to the second observation was, what would be the effects of measuring kindergarten reading ability by means of reading items derived from both an achievement test and from the structural and phonemic principles underlying the Writing to Read program?

To address these questions, students were assessed using: 1) single sentence reading items from a first grade achievement test; and 2) vocabulary items which were based on the same principles as those underlying words found in the Writing to Read Program, but not the exact words.

As discussed earlier, experimental and control group students were found to be comparable on the "Draw a Person" test. Thus, it was possible to apply the *t* test to determine if the differences in average scores of experimental and control groups on the district-made reading test were significant. Results are shown in Tables 7 and 8.

Table 7 Vocabulary Average Scores: Year 2
Kindergarten

	N	Voc.	*t*
Experimental	49	7.06	3.44
Control	60	5.50	p=.001

Table 8 Comprehension Average Scores: Year 2
Kindergarten

	N	Comp.	*t*
Experimental	50	5.8	4.40
Control	66	4.2	p=.000

Kindergarten children in the Writing to Read Program obtained significantly higher reading vocabulary and comprehension scores than the kindergarten control group children on the district-made test.

Grade 1 Reading Assessment: Year 2

Before assessing the reading status of first graders, a comparability study was undertaken. The prereading average scores (C.A.T., Level 10, Spring 1987) for experimental and control group students for whom posttest reading scores were available at the end of first grade are shown in Table 9.

Table 9 Average Pretest Scale Scores: Year 2, First Grade

	N	Pretest				
		Visual	Sound	Voc.	Comp.	Total Reading
Experimental	45	524	520	505	476	491
		n.s.	n.s.	p=.001	p=.003	p=.001
Control	50	507	511	558	522	538

There were no statistically significant differences in Visual and Sound Recognition average scores but the scores in Vocabulary, Comprehension and Total Reading were significantly different favoring the control group. In order to determine if differences in first grade reading scores were statistically significant, an analysis of covariance was undertaken.

Table 10 shows the average scale score for experimental and control groups on the first grade reading test before and after adjustments were made on pre-scores.

Table 10 Average Posttest Scale Scores: Year 2, First Grade

	N	Reading	Adjusted Reading
Experimental	44	566	583
			p=.08
Control	50	579	564

Although the data show a trend favoring the experimental group, differences were non-significant.

Assessment of Student Spelling

In the first year, a special study of spelling skills was undertaken to examine the effects of the phonemic approach in the Writing to Read Program on conventional spelling performance. A list of twelve spelling words, derived from the district spelling series, was administered at the beginning and end of the school year to first graders.

Table 11 shows the average spelling scores of experimental and control groups prior to and after the intervention of the Writing to Read program.

Table 11 Pre- and Post-test Average Spelling Scores and Significance of Their Difference

	N	Pre	Post
Experimental	64	2.55	8.56
		n.s.	p=.01
Control	85	2.13	7.62

There was no significant difference in the average spelling pretest scores between first grade Writing to Read children and children in the control schools. On the average, the children spelled two of the twelve words correctly. All of the children increased their spelling skills by the end of the school year. However, Writing to Read children's average score of nine words tested out to be significantly greater than that of the control group (eight words). These data suggest that the consistent use of the phonemic spelling system, which the children encountered in the Writing to Read program, did not interfere with their developing standard English spelling skills.

Survey of Parents

To collect parent feedback regarding the program, a questionnaire was mailed to all parents of children in the Writing to Read program in both years. Responses were received from 46% and 48% of the parents, respectively. The survey data are presented in Appendix A.

A large percentage indicated that they and their children liked the Writing to Read program.

When asked about evidence they may have seen at home of their child's reading and writing skills, the most frequently chosen were: wants to be read to; reads signs, labels, books, etc.; shares school work and wants to read it; writes words and stories.

The parents were asked to compare the progress of their child in reading and writing with the progress of their other, older children. Of those parents who had older children, about half believed their child to be making better progress and about one-third believed their child to be reading about the same as the older child did. As for writing, over half indicated that their child was doing better than the older child and about one-quarter reported that the child was writing about the same as the older child did.

Regarding computers in education, parent respondents agreed that it is important today that children learn about computers and how to use them as soon as possible.

Almost three-quarters of parent respondents indicated that their child did not know how to read when school started. In sum, there appeared to be a high level of satisfaction with the Writing to Read Program on the part of parent respondents.

Survey of Teachers

In May of the first year, questionnaires were distributed to the teachers involved in the Writing to Read pilot study. There were eight Writing to Read teachers and nine control teachers. Responses were received from all participating teachers. Their responses to the questionnaire are listed in Appendix B.

Asked to rate the overall effectiveness of the program, 87.5% of the Writing to Read teachers rated their reading programs as "very effective" in contrast with 44% of the control teachers. The remaining teachers rated their reading programs "effective." Teachers were also asked to rate the effectiveness of their reading programs for different performance groups. The majority of Writing to Read teachers rated their programs as "very effective" for above, average and below average children while the majority of the control group teachers rated their programs as effective for all groups of children.

All the Writing to Read teachers for whom these questions were applicable thought that most of their students read better and were writing better than students in previous classes. The majority of control teachers thought most of their students were reading and writing about the same as students in previous classes. None of the teachers in the control schools indicated that they spent more time on reading than in previous years; seventy-five percent of the Writing to Read teachers reported they spent more time on reading than in previous years. In both experimental and control groups, all the teachers for whom this question was applicable responded that they spent more time on writing than in previous years.

Both experimental and control teachers believed that it is important today for children to learn about computers and how to use them and that kindergarten and first graders are not too young to learn by computers.

Follow-up Assessment of Student Writing: Grade 2

One of the questions raised as a result of the first year study was what the long range effects of the Writing to Read program would be in the areas of reading and writing.

It was possible in the second year to study the performance of the group of children who had 14 weeks of Writing to Read when they were first graders. Consistent with the overall evaluation design, writing samples of children who were in the experimental program during first grade were analyzed in comparison with writing samples from the control schools.

Table 12 shows the distribution of scores of second grade students.

Table 12 Percent of Second Grade Students Obtaining Scores of 1, 2, 3, 4 on Writing Samples

	N	Excellent 1	Good 2	Basic 3	Inadequate 4
Experimental	50	28	28	36	8
Control	30	10	27	47	17

Fifty-six percent of the children who had been in the Writing to Read program obtained scores of excellent or good while 37% of the children in control schools obtained similar scores. Despite this difference in the distribution, it was not statistically significant.

Since each of the three scorers commented on a qualitative difference in the writing samples of the children in the experimental program, a question was raised about the appropriateness of the chi square test in measuring these differences. Another statistical analysis was undertaken. Instead of looking at the number of samples which fell into each of the four categories, a t test was applied to the average scores obtained by experimental and control groups.

Table 13 Mean Writing Score Differences and Their Significance

	N	Mean	t
Experimental	50	2.24	-2.14
Control	30	2.70	p=.035

As shown in Table 10, there is a statistically significant difference in the average scores of the writing samples of experimental and control group second grade students; the average Writing to Read student's score falling into the "good" category, the control student's average score falling into the "basic" category. Given the data at hand, what can be said is that the writing samples of students who were in the Writing to Read Program as first graders tend to be more fully developed and better organized than those of the control group.

Follow-up Assessment of Student Reading: Grade 2

Before analyzing the reading status of the second grade students, a *t* test was applied to their spring C.A.T. reading scores from first grade to determine if the second grade groups being studied were comparable.

There was no statistically significant difference in average reading scores of experimental and control groups as shown in Table 14.

Table 14 Average Pretest Scale Scores for Reading: 1987-88 Second Grade

	N	Pretest Reading	*t*
Experimental	61	565	.65
Control	85	556	n.s.

A *t* test was then applied to the second grade reading scores with the following results:

Table 15 Average Posttest Scale Scores for Reading: 1987-88 Second Grade

	N	Posttest Reading	*t*
Experimental	61	642	-1.11
Control	85	655	n.s.

There was no significant difference in the reading scores of the second grade follow-up population.

Summary of Findings

For two years, 1986-88, a computer-based instructional system, Writing to Read, was piloted at the kindergarten and first grade levels. This report focuses on the effects of this program and includes measures of student writing, performance on district-made and standardized reading tests, and a follow-up on second graders. Questions were asked of parents by means of surveys. Statistical techniques of group comparison and pre/post testing were used to determine effects of the program. Major outcomes are these:

Writing sample scores of kindergarten children in the Writing to Read Program were significantly better than children in the comparison group.

First grade children in the Writing to Read Program tend to get higher scores on their writing samples than do children in the comparison group but are not significantly different.

Reading Vocabulary and Comprehension scores of Writing to Read kindergarten children were significantly higher than those of the comparison group.

First grade children in the Writing to Read Program tend to score higher than the comparison group in reading but are not significantly different.

Writing to Read first graders obtained higher spelling scores than comparison first graders.

Teachers respond positively to Writing to Read. They feel that students read and write better than students in previous years.

Parents respond positively to Writing to Read. A majority report that their child does better in reading and writing than their previous children.

There were no statistically significant differences in the distribution of writing scores between follow-up second grade experimental and control group students; however, when average writing scores were obtained, there was a significant difference favoring the experimental group.

There was no significant difference in the average reading scores of follow-up second grade experimental and control group students.

Limitations

Several limitations to the study design affect the validity and generalizability of the conclusions. Limitations include the quasi-experimental research design, the additional aide in the Writing to Read Center, and the lack of comparison to an alternative kindergarten writing program.

The Board of Education decision to implement the Writing to Read Program at only one site limited the study design. A randomized study was not possible. Therefore, control students had to be matched on certain demographic data such as SES and ethnicity. Although pretest data were available to analyze pre-existing differences between groups and several cohort groups were investigated, the non-randomized design does not allow one to rule out that factors other than the intervention contributed to posttest differences.

The use of a full-time aide in addition to the teacher in the Writing to Read Center may also have contributed to the treatment effect. Rather than the Writing to Read program, it may be the additional resource person that contributed to the differences.

Finally, a more appropriate research design would have included an alternative writing intervention at kindergarten. The present study only compared Writing to Read to the district language arts curriculum at kindergarten. This curriculum does not focus on writing. Unfortunately, the present study did not have the luxury of planning such a comparison. A study is now underway to investigate a less costly alternative.

Implications

The 1987-88 Writing to Read pilot study results were generally consistent from the first to second year and were also consistent with the findings of the national Writing to Read study conducted by Educational Testing Service as well as other more recent studies (Naron, 1986; Naron and Sierra, 1988; Stevenson, Cathey-Pugh, and Kosmidis, 1988).

An implication to be drawn from this two-year pilot study is that the Writing to Read system does what it purports to do and is an effective intervention for developing writing and reading skills in kindergarten and writing skills in first grade. The quality of the writing samples, in particular, seems to corroborate the Writing to Read Program rationale.

Writing to Read builds on students' natural language development and provides a consistent format which allows students to turn their spoken language into words they can read. The ready-made package for accomplishing these goals, however, is relatively costly. Without making use of the sophisticated technology, which is certainly appealing to the children and keeps them on task, the principles themselves, i.e., talk, write, read should be more thoroughly tested as another approach to teaching in kindergarten and first grade. A study of this nature conducted by Naron and Sierra (1988) suggests that Writing Process Instruction may be a less costly alternative with comparable results to the Writing to Read Program.

REFERENCES

Murphy, R.T., & Appel, L.R. (1984). Evaluation of the Writing to Read Instructional System: Second Year Report. Princeton, New Jersey: Educational Testing Service.

Naron, N.K. (1986, June). Writing to Read Program: 1985-1986 (PE86-515-14). Fort Worth, Texas: Fort Worth Independent School District.

Sierra, R., & Naron, N.K. (1988, April). Evaluating the Writing to Read Program: Seeking the Ghost in the Machine. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Stevenson, T., Cathey-Pugh, J., & Kosmidis, M. (1988). Achievement in the Writing to Read Program: A Comparative Evaluation Study. Washington, D.C.: District of Columbia Public Schools.

Appendix A

Teacher Questionnaire*
Kindergarten and First Grade Teachers
Experimental (X) and Control (C) Schools

		Reported in Percents	
		X	C
		N=8	N=9
1. Do you use a reading program?	Yes	100	89
	No		11
2. How do you feel about the reading program?			
	Like it very much	87.5	56
	Like it	12.5	33
	Not sure		
	Dislike it		
	Dislike it very much		
	No response		11
3. How would you rate its overall effectiveness?			
	Very effective	87.5	44
	Effective	12.5	44
	Not sure		
	Ineffective		
	Very ineffective		
	No response		11
4. How do you think the progress in reading of most of your students compares to the progress in reading of your students in previous years?			
	Reading better than students in previous classes	75	22
	Reading about the same as students in previous classes		44
	Not reading as well as students in previous classes		
	This is my first year teaching at this grade level	12.5	
	Not applicable (not taught at this grade level)	12.5	11
	No response		22
5. How do you think the progress in writing of most of your students compares to the progress in writing of your students in previous years?			
	Writing better than students in previous classes	75	22
	Writing about the same as students in previous classes		56
	Not writing as well as students in previous classes		22
	This is my first year teaching at this grade level	12.5	
	Not applicable (not taught at this grade level)	12.5	

*Items are reprinted with permission by IBM Corporation.

	X	C
6. How does the amount of time you spend on reading compare with the amount you spent in previous years?		
Spending more time on reading than in previous years	75	
Spending about the same amount of time	12.5	78
Spending less time on reading than in previous years		22
Not applicable (not taught at this grade level)	12.5	
Not applicable (first year teaching this grade level)		
7. How does the amount of time you spend on writing (expository writing rather than penmanship) compare with the amount you spent in previous years?		
Spending more time on writing than in previous years	87.5	44
Spending about the same amount of time		56
Spending less time on writing than in previous years		
Not applicable (not taught at this grade level)	12.5	
Not applicable (first year teaching this grade level)		

8. How would you rate the effectiveness of your reading program for the following groups of children? (Please check one in each column)

	Above Average		Average		Below Average	
	X	C	X	C	X	C
Very effective	100	33	75	33	62.5	11
Effective		56	12.5	56	25	78
Not sure			12.5		12.5	11
Ineffective						
Very ineffective						
No response		11		11		

9. What kind of feedback have you had from parents about your reading program?	X	C
Very positive	75	22
Positive	25	56
No feedback		22
Negative		
Very negative		

			X	C
10.	It is important today that children learn about computers and how to use them.	Agree	87.5	78
		Disagree	12.5	11
		No Response		11
11.	The children are progressing as well as expected.	Agree	100	67
		Disagree		11
		No Response		22
12.	Money being spent on computers should be spent on other things.	Agree	12.5	22
		Disagree	87.5	33
		No Response		44
13.	Too much time is spent on the reading program.	Agree		11
		Disagree	100	78
		No Response		11
14.	Children this age are too young to learn by computers.	Agree	12.5	22
		Disagree	87.5	67
		No Response		11
15.	I hope our school will continue to use the reading program next year.	Agree	100	78
		Disagree		11
		No Response		11
16.	Our school should emphasize reading skills more than they do at present	Agree		11
		Disagree	87.5	78
		No Response	12.5	11
17.	Our school should emphasize writing skills more than they do at present.	Agree	12.5	11
		Disagree	75	78
		No Response	12.5	11

Appendix B

Parent Survey* Responses
Writing to Read Kindergarten and First Grade Students

		Reported in Percents	
		N = 66	N = 69
1. Are you familiar with the Writing to Read program being used in your child's class?	Yes	97	96
	No	3	4
2. How have you learned about the Writing to Read program? (Please check all that apply)			
	By talking with my child	83	91
	By talking with my child's teacher	77	78
	By talking to other parents	27	22
	By visiting the school	58	65
	The school sent me a notice about it	58	58
3. In general, how do you feel about the Writing to Read program?			
	I like it very much	71	71
	I like it	20	14
	Not sure	5	6
	I dislike it	3	0
	I dislike it very much	0	1.5
	No response	1	1.5
4. How do you think your child feels about the Writing to Read program?			
	Likes it very much	79	81
	Likes it somewhat	17	10
	I don't know	0	3
	Doesn't seem to like it	0	0
	Doesn't like it at all	1	3
	No Response	3	3
5. What evidence of your child's reading and writing skills have you seen at home? (Please check all that apply)			
	Leaves notes around the house	52	54
	Reads signs, labels, books, etc.	79	86
	Wants to be read to	80	75
	Wants to do his/her own reading	70	75
	Wants to read to other people	65	61
	Writes words and stories	76	83
	Shares school work and wants to read it	77	72
	No response	1	1

*Items are reprinted with permission by IBM Corporation.

		Reported in Percents	
6. How do you think your child's progress in reading compares to your other children's at this grade level?			
	Is doing better than my older children did	19	27.5
	Reads about the same as my older children did	13	11.5
	Is not doing as well as my older children did	3	6
	Have no opinion	6	12
	This is my first child at this grade level	52	43
7. How do you think your child's progress in writing compares to your other children's at this grade level?			
	Is doing better than my older children did	23	28
	Writes about the same as my older children did	9	10
	Is not doing as well as my older children did	3	3
	Have no opinion	5	13
	This is my first child at this grade level	52	46
8. It is important today that children learn about computers and how to use them as soon as possible.	Agree	85	88
	Disagree	14	7
	No response	1	4
9. The money being spent on computers should be spent on other things.	Agree	5	7
	Disagree	82	86
	No response	13	7
10. I am concerned about the way my child spells words when writing.	Agree	42	48
	Disagree	55	46
	No response	3	6
11. Too much class time is spent on Writing to Read.	Agree	4.5	6
	Disagree	94	93
	No response	1.5	1
12. Children at this age are much too young to learn by computers	Agree	3	3
	Disagree	94	94
	No response	3	3
13. My child knew how to read when school started.	Agree	20	29
	Disagree	74	67
	No response	6	4
14. I hope our school will continue to use the Writing to Read program being used this year.	Agree	92	91
	Disagree	3	1
	No response	5	7
15. Our school should emphasize reading skills more than they do at present.	Agree	41	58
	Disagree	55	32
	No response	4	10
16. Our school should emphasize writing skills more than they do at present.	Agree	39	55
	Disagree	56	33
	No response	5	12